REPORT OF A CASE OF DETACHMENT OF THE LIGAMENT OF THE PATELLA.

TREATMENT BY SUTURE. RECOVERY.

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REPORT OF A CASE OF DETACHMENT OF THE LIGAMENT OF THE PATELLA. TREATMENT BY SUTURE. RECOVERY.[1]

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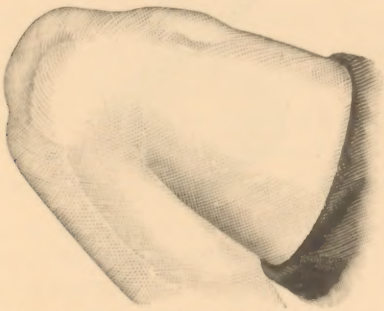
Last November a large healthy man, forty-five years of age, was admitted to Episcopal Hospital. He had stumbled and fallen, striking his right knee with great violence upon a cobble-stone. Examination of the joint revealed a change of its natural contour. It was flattened anteriorly, and on flexing the leg upon the thigh, the form of the condyles of the femur

Fig. 1.



Showing deformity after detachment of ligamentum patellæ—with the leg flexed upon the thigh.

became clearly exposed, as shown in the illustration. There was a moderate fluctuation from effusion. The entire patella could be felt and seen drawn well up the thigh. No fragment of bone could be detected above the tuberosity of the tibia. As it was, therefore, evident that the patella had been torn away from its ligament, it was decided to open the knee-joint at once. The patient was etherized, and after preparation of the parts con-

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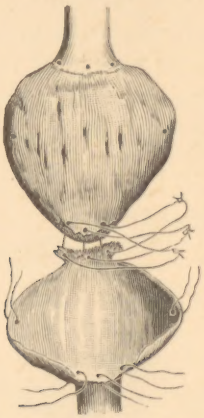
cerned the seat of injury was laid bare by a longitudinal incision in front of the joint about seven and a half inches in length. Not only was the condition of affairs looked for found, but in addition to the detachment of the ligament from the patella, the whole fibrous covering of the latter was found to have been ripped off and to have remained attached to the ligament. The patella was readily brought down to its natural position between the condyles, and but for its bare anterior surface was found to be intact. Very complete and durable coaptation was effected by the introduction of eight interrupted silkworm-gut sutures

FIG. 2.



Showing patella stripped of its tendinous covering, and the eight points of suture with silkworm-gut.

at the following points: Three king sutures upon which the greatest reliance could be placed were carried through three small drill holes at the apex of the bone, uniting it with the stump of the ligament. The upper margin of the aponeurotic hood was then attached to the fringe-like fibres of the tendon of the quadriceps extensor with which it had been continuous, while its lateral margins were sutured through drill-holes on either side of the patella. As all of these silkworm sutures passed through either holes drilled in the bone or through a very stout tendon, the approximation of the parts was not only snug but very strong. The points of suturing are shown in the accompanying illustration. After thoroughly cleansing the knee-joint

the long wound was closed, catgut drain being placed in its upper and lower angles. A liberal gauze-dressing was applied, and a long posterior splint retained to the limb. Three days afterward the dressing was removed on account of a slight rise in the patient's temperature, but it was found to be quite dry, except at the points of drainage, where a few drops of blood-stained synovial fluid escaped. The joint was free from redness, fluctuation, and pain. In a month the patient was allowed to get into a wheeled chair. The natural contour of the joint was entirely restored.

Five months after the accident he was allowed to begin to flex the knee with considerable force, and it is interesting to observe that almost all the motion he now has, has been acquired within one month. As will be seen, he walks without a limp, and his limb has almost completely regained its strength. The patella is felt to be freely movable, and there appears, therefore, to be no obstacle to the restoration in a short time to the normal function at the joint.

So far as I can learn, sixty-six cases of rupture of the ligamentum patellæ have been reported. This number includes detachments of its upper and lower extremities as well as ruptures in its continuity. Of these I have had an opportunity of referring to fifty-five, including thirteen cases which were collected by Dr. Sands from the records of four hospitals in the City of New York.

In all the cases where treatment was employed some appliance appropriate for fracture of the patella was used with results stated to be fair or good, save three. In two of these the knee-joint was opened and the parted ligament sutured to some fibrous tissue attached to the tuberosity of the tibia, by Sands, of New York, and to a similar structure at the apex of the patella by MacFarlane, of Toronto, with excellent results. In both these cases silver wire was used. In the third case operated upon the stump of the ligament and some fibrous tissues at the apex of the patella were scarified long after the occurrence of the injury, but no sutures were used.

Two very remarkable cases are reported by Mr. Shaw, of London, of simultaneous rupture of both ligaments. In one, both ligaments were detached from the apices of the patellæ, while in

the other case both parted from their insertions in the tuberosities of the tibiæ.

While, technically, even a very minute fragment of bone remaining in contact with the detached ligament would, if the separation occurred at its patellar extremity, constitute a fracture of the latter, a similar condition at its tibial insertion could hardly be classified, without causing confusion, as a fracture of the tibia. It would, therefore, seem proper to class such an injury as rupture, or, I think better, as detachment of the ligament, if a greater part of its rent surface is tendinous, not bony.

In a very large proportion of cases recorded the lesion was caused by muscular violence. The case now reported I incline to attribute to the combined forces of direct impact and muscular contraction acting simultaneously; the cobble-stone forcing the apex of the patella backward, while the tensile strain was applied by the muscles of the thigh. I do not think that the tendinous covering of the bone could have been stripped off by either direct violence or muscular contraction alone. Regarding the advantage in operating at once or at a later period: if opportunity for the former offers, I see no reason for delay, provided there is no severe bruising of the soft parts adjacent, for the inflammatory reaction from the mere rupture is in most cases noticeably slight, and coaptation can be far more satisfactorily effected before, than after adhesions have formed.

As the special feature of this case is the stripping of the bone, it would be of great interest to know if a similar injury had ever happened before, but as its existence could not be revealed except by operation, whether it is unique or not must remain a matter of conjecture. While it might have added to the risks of necrosis of the bone from impairing its blood supply had suppuration occurred, it certainly aided materially in securing an approximation well equal to resisting any accidental strain that might be put upon it during the process of repair.

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